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ABSTRACT

Barriers to doctoral dissertation completion were identified from a review of empirical studies of doctoral graduates and graduate students who had not completed a dissertation (ABD students) and reviews of components of doctoral persistence. The Dissertation Barriers Scale, comprising 45 items, was constructed and administered jointly with 2 validation measures, to samples of 142 graduates of a College of Education and 97 ABDs. Results suggest four subscales to explain item intercorrelations. They were labeled: (1) advisor/committee functioning, 11 items, alpha=0.82; (2) personal organization and skills, 9 items, alpha=0.81; (3) time management and external pressures, 12 items, alpha=0.81; and (4) research skills, 7 items, alpha=0.71. The remaining items formed unique factors and were deleted. Subscales significantly differentiated graduates and ABDs. Subscales also correlated significantly, though at low to moderate levels, with validation measures. Results suggest the Dissertation Barriers Scale to be useful in research of doctoral student persistence. (Contains 4 tables and 20 references.) (Author/SLD)

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The Dissertation Barriers Scale

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Abstract

Barriers to doctoral dissertation completion were identified from review of empirical study of doctoral graduates and ABD students as well as from components of two models of doctoral persistence. The Dissertation Barriers Scale, comprising 45 items, was constructed and administered jointly with two validation measures, to samples of 142 graduates of a College of Education and 97 doctoral candidates (ABDs). Results suggested four subscales to explain item intercorrelations. They were labeled (1) advisor/committee functioning, 11 items, alpha = .82, (2) personal organization and skills, 9 items, alpha = .81, (3) time management and external pressures, 12 items, alpha = .81, and (4) research skills, 7 items, alpha = .71. The remaining items formed unique factors and were deleted. Subscales significantly differentiated graduates and ABDs. Subscales also correlated significantly, though at low to moderate levels, with validation measures. Results suggest the Dissertation Barriers Scale to be useful in research of doctoral student persistence.

Failure to complete a dissertation accounts for some 20% of the high attrition from doctoral programs in education (Bowen & Rudenstine, 1992). Failure at this point is expensive and painful for the student, discouraging for the faculty involved, and injurious to the reputation of the institution. Hence, attention has been paid to identifying variables related to delay or failure to complete a dissertation. These variables include situational, program-specific, cognitive, and affective or personality factors. Situational factors identified as having a significant effect on dissertation completion include amount of financial assistance obtained and whether full-time employment was needed (Germeroth, 1990; Wright, 1991). Distance to the university has also been identified as a significant factor, especially for those leaving the city or state to take full-time jobs (Muszynski, 1991). Family, friends, and peer support (or lack of) have been cited as barriers or facilitators as well (Jacks et al., 1983).

A number of investigators have examined program and task variables. Factors identified were: Substantive problems with the dissertation topic, lack of interest in the topic, lack of support from or conflict with the dissertation chair, difficulty in time management, lack of structure of the dissertation phase, inadequate prior exposure to research, lack of confidence in data analysis skills, and the persistent view of the dissertation as a magnum opus rather than simply a competent piece of work (Germeroth, 1991; Jacks et al., 1983; Muszynski & Akamatsu, 1991). Mentoring relationships and general faculty-student interactions are significantly related to student success in a doctoral program (e.g., Turner & Thompson, 1993).

Cognitive and affective characteristics have been identified as dissertation barriers as well. These characteristics include: history of separation and loss in childhood (Stern, 1985), achievement via independence, level of stereotypical masculinity (Hobish, 1978), perfectionism (Germeroth, 1991), persistence as a coping style (Weiss, 1987), and different facets of procrastination (Muszynski & Akamatsu, 1991). Wentzel (1987) found time to completion to relate to locus of control, with a high internal locus of control associated with faster completion. Smith (1985) and Wagner (1986), however, found no association with locus of control. Gender, socioeconomic status, and fear of success have not been found to relate significantly to dissertation completion. The need for self-discipline and self-motivation are seen as the major personal factors reported by the ABD students. Procrastination and perfectionism are estimated to affect from one fourth to nearly all college students (Ellis & Knaus, 1977), with doctoral delayers and noncompleters reporting higher levels of these variables than completers (Muszynski & Akamatsu, 1991). Attribution of responsibility has also been found to differ between completers and ABD (all but dissertation) students (Green & Kluever, 1996).

Models of graduate student persistence have been developed by Girves and Wemmerus (1988) and Tinto (1993). Girves and Wemmerus included three factors in their model: program involvement, including financial support and student perceptions of relationships with the faculty; the actual student/faculty relationship; and department characteristics. Tinto's model posits multiple stages of doctoral completion as well as multiple factors within stages. Stages are differentiated by the major tasks or relationships achieved. The first and second stages are accomplished when the student establishes academic and social relationships with faculty and acquires content and research competency. The third stage applies to doctoral candidates. Tinto suggests that persistence at this stage is a function of external commitments (family,

job) and the student's relationship with the advisor. Tinto's model incorporates five factors: student attributes, program entry goals and orientation, institutional and program experiences, academic and social integration into a program, and research experiences. Research experiences include opportunities to work with faculty, faculty-advisor relationships, and department financial support. Both of the models cited suggest specific factors that may serve as barriers or facilitators to doctoral progress. For example, both models suggest persistence to be dependent upon relationships with faculty, particularly the advisor. Both models also posit financial support as an important factor.

The purpose of this investigation was to develop and evaluate a scale to assess doctoral students' and graduates' concepts of barriers to dissertation completion. The function of the measure is to clarify the presence and importance of barriers to dissertation completion. This information can be useful in improving mentoring and guidance of doctoral students. Advisors and students alike can be made more aware of potential problems. Scale items were designed to reflect variables identified in the literature with items suited to doctoral level concerns and to reflect specific factors suggested by Tinto (1993) in his model of doctoral student persistence. Items were further developed from three focus groups held with graduates and students.

Method

Participants

Participants for this study were drawn from an urban private College of Education in a western state. The College enrolls primarily doctoral students along with a smaller number of master's students. Participants were 142 of the 154 graduates of the program (graduated within the past five years) and 97 of 111 doctoral candidates who began the program at about the same time as the graduates and had only their dissertation remaining to complete before graduation. Females made up 71% of the total sample and males 29%. Students were significantly older than graduates ($t=2.8$, $p<.01$). The ages of students ranged from 28 to 70 years (Mean = 44.4 yr.) and the ages of graduates from 27 to 63 years (Mean = 41.8 yr.) Males reported more full time employment than females. For graduates, 92% of males and 72% of females reported full time employment and for students, 89% of males and 72% of females indicated that they were employed full time. Graduate females (27%) reported more part-time employment than males (6%). For students, 23% of females and 7% of males reported part-time employment. Very few graduates or students were unemployed. About half (47% to 66%) of the males or females in both groups reported having some experience with data analysis and the same proportion reported having experience conducting research (56% to 60%). However, only a small proportion of males or females in either group indicated that they had previously published research (10% to 23%). Among graduates, more females than males indicated that they lived in the metropolitan area while working on their dissertations (67% vs. 58%) and among students, 55% of the females and 30% of the males lived in the metropolitan area while writing the dissertation.

Instruments

Three focus groups were conducted to discuss dissertation preparation. One focus group consisted of graduates and the other two groups were made up of students who had not yet completed their dissertation. In order to encourage free expression, the focus groups were directed by an advanced-standing doctoral student, not by a faculty member. Items advanced in the

focus groups were combined with suggestions from the literature and Tinto's (1993) model to provide the content for Dissertation Barriers Scale items.

The Dissertation Barriers Scale comprised 45 items with responses on a -3 to +3 scale, with a midpoint defined as NC (not a concern for you). A not applicable option was also provided. Items were phrases completing a stem that varied in verb tense for graduates and ABDs. For graduates the stem was "Were each of the following concerns to you or difficulties you encountered in completing your dissertation? It was a (-3: major hindrance, +3: major help)" The stem for ABDs was "Are each of the following concerns to you or difficulties you are encountering in completing your dissertation?"

Items were grouped as follows: financial concerns--2 items; family/relationship concerns--4 items; relationship with advisor/committee--8 items; working with committee--5 items; institutional resources--2 items; topic concerns--4 items; structure/time concerns--6 items; affective concerns--7 items; perceptions of skills--7 items. In the data analysis, items were rescaled for convenience to form a 1-7 scale, with 1= major hindrance and 7=major help. "Not applicable" responses were treated as missing.

Two other scales were administered to subjects along with a demographics and background information sheet. The first scale was the 43 item Procrastination Inventory (Muszynski & Akamatsu, 1991). This inventory was originally developed to assess stresses in programs educating scientist-practitioners, with items adapted from the Procrastination Assessment Scale - Students (Soloman & Rothblum, 1984). The items were modified to tap facets of procrastination unique to working on a dissertation. The inventory was formed from 11 subscales, some with only 2 items. Reliabilities for subscales for the present study varied from .34 to .78 (see Table 4). Subscales with only two items had low reliabilites. The total scale reliability was .86.

The second scale was the Responsibility Scale (Green & Kluever, 1996). This is a 16-item measure comprising two subscales reflecting students' and graduates' perceptions of attributed responsibility (student or university)' for each of a core set of dissertation completion tasks. The student/university choices were at opposite ends of a seven-point continuum but a four-point scale would be just as sensitive. The two subscales reflect dissertation preparation tasks and dissertation evaluation tasks. Sample items are "responsibility for scheduling student-advisor meetings rests with . . ." and "responsibility for evaluating the presentation style of the chapters rests with . . ." Items address the current state of responsibility for tasks (Is Scale) and in a ideal program who should be responsible for tasks (Should Be Scale). Reliabilities for these measures are presented in Table 4.

Other items on the survey included questions about each subject's experiences with dissertation preparation, strategies they employed in the process, and attitudes relating to events associated with working on the dissertation. Background information included items associated with employment while doing the dissertation, previous experience with research, local or distant places of residence from the campus, financial support, and ratings of perceived support systems. Responses to some items were omitted by some subjects and are reflected in the somewhat different total sample sizes for varied analyses.

Procedure

Participants were mailed a survey that was 12 pages in length (6 double-sided sheets) with a total of 157 closed-response questions and 1 open-ended question. The survey consisted of demographic questions, items about

dissertation funding and preparation, sources of support, the Responsibility Scale (Green & Kluever, 1996), a modified version of the Procrastination Inventory (Muszynski & Akamatsu, 1991), and the targeted measure, the Dissertation Barriers Scale. The surveys for the graduate and student groups contained the same inventories and statements except for verb tense relating to dissertations completed versus dissertations in the process of being completed. Code numbers were assigned to surveys for follow-up purposes. A stamped, self- addressed envelope was enclosed for the survey to be returned. All surveys were returned to a departmental secretary who recorded the code and routed the survey to an emeritus professor for processing. The secretary sent a second copy of the survey to nonrespondents after three weeks and a third copy following a second 3-week period. Surveys were returned by 142/154 (92%) of the graduates and 97/111 of the students (87%).

A Rasch analysis of each subscale was performed using BIGSTEPS (Linacre & Wright, 1994). This analysis provided information about the fit of items and persons to a unidimensional model, and provided a display of items and persons placed on a common metric. For all subscales, the 7-point scale was not well utilized. A 4-point scale would be adequate to capture responses to these items as respondents primarily used only categories 1, 3, 4, and 7.

Results

Most of the items means for the dissertation barriers scale clustered in the 3-5 range, suggesting that on average many items represented minor hindrances, were neutral, or represented minor levels of help. Items that were rated as major hindrances involved concerns about time pressures and financial/family concerns. Items rated as "help" related to family support, persistence, and relationships with advisors. Table 1 presents the original 45-item scale and item means.

Table 1 here

Significant differences in response choices between graduates and students were identified for 29 of the 45 items (Table 1). In most cases, scores were lower for students, suggesting their perception of items as barriers rather than facilitators. In a discriminant analysis involving prediction of membership as a graduate or as a student on the basis of item responses, 81% of the individuals were predicted to be members of their respective groups. These findings suggest that there are identifiable differences between the two groups in their responses to dissertation barriers items.

The correlations among items were low to moderate suggesting that groups of items existed within the measure that were relatively independent of each other. The coefficient alpha reliability for the total scale (45 items) was .91. A principal components analysis of the scale resulted in twelve factors with eigenvalues greater than 1.0. The twelve factors had too few items to be considered stable measures of sub-constructs so varying solutions to the principal components analysis were evaluated. After generating analyses with from 3-9 factors, the 3-factor solution was considered the most readily interpretable. The 3-factor solution was then reviewed for cross-loading and inadequately loading items; these items were eliminated and the analysis rerun. The three groups of items measuring each factor were then submitted to a Rasch analysis and misfitting items deleted. This analysis clarified fit of items to a unidimensional structure and provided an interval rescaling of the

ordinal rating scale responses. The resulting three subscales were labeled as (1) advisor/committee functioning, 11 items, alpha = .82, (2) personal organization and skills, 9 items, alpha = .81, (3) time management and external pressures, 12 items, alpha = .81. Items deleted in the factor and Rasch analyses were combined and analyzed separately. A fourth subscale, research skills, with 7 items, alpha = .71, was defined. Items forming each subscale are indicated in Table 1. The distribution of scores for all four subscales were somewhat positively skewed and leptokurtic. The four subscales were significantly positively correlated, with correlations ranging from .14 to .48 (Table 2). For subscales 1 and 3, the sample mean fell below the item mean, indicating respondents perceived items to be a hindrance. For the second subscale (personal organization and skills), the sample mean fell above the item mean, indicating respondents perceived items as a help. The sample mean for the research skills subscale was at the item mean. Raw score and Rasch-scaled means are presented in Table 2.

Table 2 here

Rasch rescaled responses for each subscale were then used in multivariate analysis of differences associated with graduate status, gender, area of study, employment, and residence during dissertation work (easy access to university or not). Results of these analyses suggested differences attributable to status, Wilk's lambda = .86, $p < .001$, for all four subscales (Table 3). Scores for graduates were higher than for students, suggesting students to perceive all areas as barriers to a greater extent than graduates. Significant univariate differences in external pressures and research skills were also found for residence during the dissertation process, with greater perceptions of barriers for students living away from the university. No other effects were significant at $p < .05$.

Table 3

Dissertation barrier subscale scores were correlated with scores on subscales of the Procrastination Inventory and the Responsibility Scale and with two items reflecting the extent of emotional support received while doing a dissertation (Table 4). Advisor/committee functioning was negatively correlated with the Procrastination Inventory subscales rebellion and difficulty making decisions. The personal organization and skills subscale correlated with low frustration tolerance, rebellion, difficulty making decisions, unable to take help, self-denigration, lack of structure, and task aversiveness. The time/external pressures subscale correlated with low frustration tolerance, rebellion, difficulty making decisions, need for approval, self-denigration, insufficient reinforcement, and task aversiveness. The research skills subscale correlated with low frustration tolerance, rebellion, difficulty making decisions, unable to take help, self-denigration, insufficient reinforcement, and task aversiveness. All correlations were low to low-moderate in magnitude. Significant correlations, again of low magnitude, were found with the Responsibility Scale for advisor/committee functioning and personal organization and skills. The highest correlation for emotional support items was between advisor/committee functioning and time management/external pressures.

Table 4 here

Discussion

The Dissertation Barriers Scale describes differences reported by graduates and ABDs, with ABDs rating most individual tasks as well as all subscales more strongly as barriers. The finding of greater perceptions of barriers to dissertation completion for persons living away from campus is consistent with results reported by Muszynski (1991). Low to low-moderate correlations for three of the four subscales with certain personality characteristics along with the negative correlations of Advisor/Committee functioning with rebellion and difficulty making decisions were anticipated.

Mean scores were lowest for the time management/external pressures subscale, indicating that respondents felt these items to form the most substantial barrier to dissertation work. Personal organization and skills were seen as facilitating characteristics.

Since respondents did not fully utilize the scale, a revised scale with fewer choices (3-4) along with a not applicable choice may be as productive as this 7-point scale. Replication of this work in other academic departments with different dissertation requirements and/or different professional directions of graduates would be of interest.

Task structure and time management were items seen as barriers. These results argues for reinforcements and incentives designed to provide time and task structure for students. Such incentives could be formal passage of a series of landmark events (such as completing the proposal, obtaining approval from the human subjects review board, presenting the study plans at an in-house symposium, submission of a dissertation progress log, and so forth), completion and approval of a dissertational proposal before departing the university, or attendance at a dissertation preparation seminar. Hatley and Fiene (1995) reported ABD students as "pleading for more structure, opportunity, encouragement, and mentoring in their . . . professional lives" (p. 2). Franek (1982) incorporated discussion of time management, negative emotions, motivational strategies, advisor-student relationships, and writer's block in a four-session program. Students remaining ABD for some determined length of time could be encouraged to participate in such a program.

Limitations of this study included biases due to the homogeneous sample of participants. Results may differ if a broader range of departments were included. Further, the study's theoretical base was weak in that there is no specific rationale provided in the literature for why some characteristics of tasks and individuals benefit performance and others do not. Rather, several theories, primarily in higher education, were drawn upon to speculate about potential barriers and facilitators.

University administrators and dissertation advisors need to be made aware of these barriers to dissertation completion and restructure programs to facilitate a higher completion rate. Students could be made aware of the strategies employed by graduates to complete their dissertations. Methods and attutudes that graduates used to cope with personal circumstances, financial stresses, advisor/committee selection and relationships, time allocation, and the process of completng and writing the dissertation would be helpful to dissertation writers. This information could be disseminated to students through college publicatons (e.g., "hints to dissertation writers"), special seminars, guest presentations by recent graduates, and through student/advisor

conferences. Close monitoring of student progress through coursework to identify possible risk factors/behaviors and deal with these in a timely fashion may be useful in increasing the graduation rate. Ways in which support systems were structured by graduates would be of value to students since support is a critical variable for dissertation completers.

An extension of this study might include investigations in other departments and in other universities with varied student characteristics and different professional directions of graduates. Items representing more barriers/facilitators associated with dissertations might also be added to the scale. Greater detail of the specific nature of dissertation completion variables might be afforded by structured interviews. Further investigation might probe the relationship of the subscales to measures of self-esteem, locus of control, and other personality variables. However, the scale shows promise in exploring perceptions of dissertation barriers for doctoral students and graduates, and may contribute to a more complete understanding of the personal and structural variables facilitating completion.

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Table 1.
Dissertation Barriers Scale Items

Subscale	p	Mean	Item
*	.01	2.69	financial need to support self/family
3[a]	.88	2.46	loss of free time to spend with family/friends
*	.01	3.49	proximity to university
4	.98	3.84	library hours
*	.01	3.74	scheduling meetings with advisor(s)
1	.10	3.78	conflict with dissertation director
1	.01	4.28	dissertation director's perfectionism
4	.02	3.82	my own perfectionism
1	.12	3.97	my lack of interest in dissertation topic
1	.04	3.56	faculty's lack of interest in my topic
4	.02	3.52	choosing the dissertation topic
4	.01	3.36	narrowing the dissertation topic
*	.01	3.89	finding an advisor to work with on the topic
3	.01	3.16	lack of structure of dissertation process
3	.01	3.02	difficulty with time management
3	.28	3.15	inadequate prior exposure to research
3	.07	2.87	inadequate prior experience with data analysis
1	.02	3.62	obstructive committee member[b]
1	.04	3.69	lack of support from dissertation director
4	.01	4.28	doing the literature review
4	.05	3.89	collecting the data
*	.65	3.83	typing/word processing
3	.01	2.16	job-related pressures/demands
3	.01	2.39	setting aside time for the dissertation
3	.01	3.69	setting aside a space/room for dissertation
1	.07	4.01	getting drafts back from committee members
1	.37	3.72	lack of constructive/concrete feedback from committee
3	.01	2.87	delay in starting dissertation after comps

table continues

Table 1 (continued)

Subscale	p	Mean	Item
3	.03	2.78	conflict with role as home/family head
3	.19	3.73	inability to plan ahead
3	.01	3.09	isolation from other students
1	.01	5.28	advisor's support and encouragement
1	.01	5.27	prompt return of drafts from advisor
1	.01	5.58	collegial relationship with advisor
2	.01	5.27	self-direction
2	.01	5.51	support of family, friends
2	.01	5.27	willingness to take academic risks
2	.01	5.52	organizational skills
*	.01	3.27	time pressures
2	.12	5.50	approaching dissertation in sections rather than as one complete task
2	.01	4.53	ability to live with ambiguity
4	.32	5.70	advisor's expectation that you wold finish
2	.56	5.53	love of the dissertation topic
2	.01	6.07	persistence
2	.01	5.11	sticking to a schedule

[a]Subscales are (1) advisor/committee functioning, (2) personal organization and skills, (3) time management and external pressures, and (4) research skills.
[b]Higher mean score for students than graduates.

Table 2.
Subscale Intercorrelations

Subscale	Personal	Time Mgmt	Research Skills	Raw Mean	SD	Rasch Mean	SD
Advisor/Committee Functioning	.17	.42	.26	4.38	.95	-.23	.92
Personal Organization and Skills		.14	.48	5.37	1.07	1.00	1.04
Time Management and External Pressures			.21	2.95	.72	-1.07	.78
Research Skills				4.07	.94	.02	.60

Note. All correlations are significant at $p < .05$. Scale is 1=hindrance and 7=help.

Table 3.
Multivariate Analysis of Variance of Subscale Scores by Status and Proximity to Campus

Multivariate Main Effect: Status, Wilk's Lambda = .85, p<.001
Multivariate Main Effect: Proximity to Campus, Wilk's Lambda = .95, p<.06

	Graduate Status			Student Status				
Subscale	Mean	SD	n	Mean	SD	n	F	p
advisor/committee functioning	.01	.83	118	-.49	.87	78	15.80	.001
personal organization and skills	1.23	1.05		.67	.92		14.52	.001
time management and external pressures	-.87	.73		-1.17	.65		8.91	.003
research skills	.19	.57		-.15	.55		17.32	.001

	Live In/Near City			Distant				
Subscale	Mean	SD	n	Mean	SD	n	F	p
advisor/committee functioning	-.13	.86	130	-.33	.92	64	2.21	.14
personal organization and skills	1.08	.97		.88	1.15		1.62	.21
time management and external pressures	-.91	.69		-1.14	.74		4.26	.04
research skills	.13	.60		-.09	.53		6.55	.02

Table 4.
Correlation of Dissertation Barriers Subscales and Related Measures

Measure	Alpha	Dissertation Barriers Subscale 1[a]	2	3	4
Procrastination:					
Low Frustration Tolerance	.34		-.25	-.25	-.25
Perfectionism	.52				
Rebellion	.59	-.23	-.27	-.22	-.27
Difficulty Making Decisions	.41	-.17	-.15	-.27	-.35
Need for Approval	.39			-.23	
Unable to Take Help	.38		-.14		-.27
Procrastination as a Work Style	.53				
Fear of Finishing School	.60				
Self-Denigration	.68		-.29	-.35	-.31
Insufficient Reinforcement/ Lack of Structure	.78		-.38	-.36	-.37
Task Aversiveness	.75		-.39	-.39	-.34
Total Score	.86	-.16	-.35	-.39	-.38
Responsibility Scale:					
IS Preparation	.75				.16
IS Evaluation	.69				
SHOULD BE Preparation	.83	-.15	-.19	-.24	
SHOULD BE Evaluation	.65	-.15	-.19	-.15	
Rated Emotional Support from:					
Advisor		.42	.25	.21	.36
Committee			.17	.26	.29

[a]Dissertation Barriers Subscales are (1) advisor/committee functioning, (2) personal organization and skills, (3) time management and external pressures, and (4) research skills.